SpringCore Maven

Exercise 2: Implementing Dependency Injection

Scenario:

In the library management application, you need to manage the dependencies between the BookService and BookRepository classes using Spring's IoC and DI.

Steps:

1. Modify the XML Configuration:

o Update applicationContext.xml to wire BookRepository into BookService.

2. Update the BookService Class:

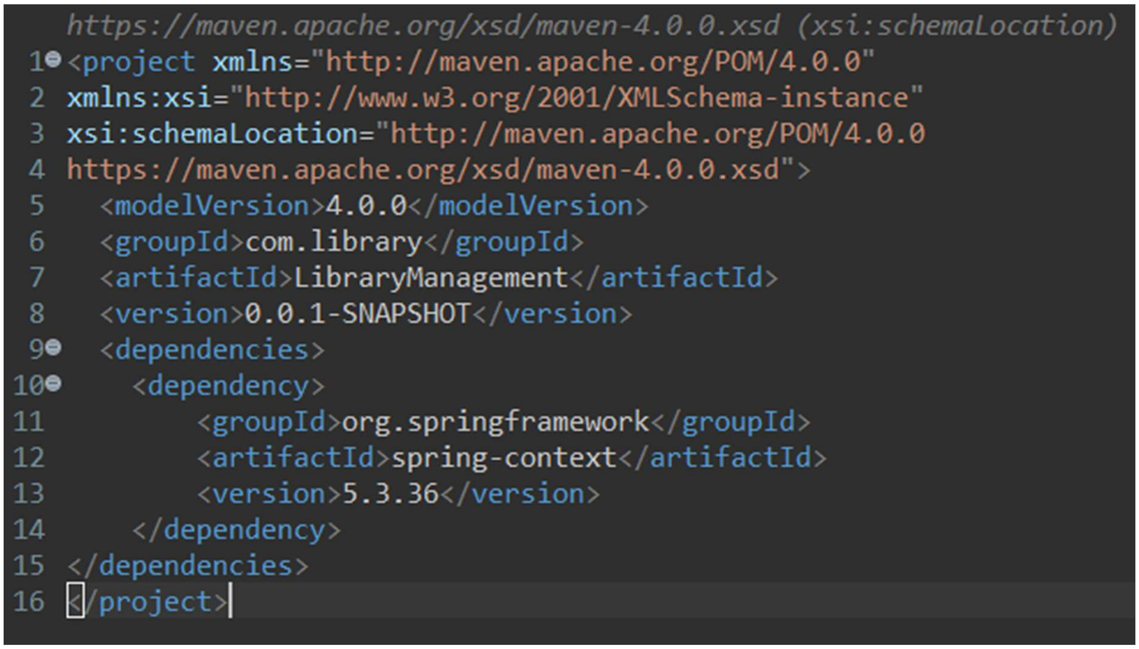
o Ensure that BookService class has a setter method for BookRepository.

3. Test the Configuration:

o Run the LibraryManagementApplication main class to verify the dependency injection.

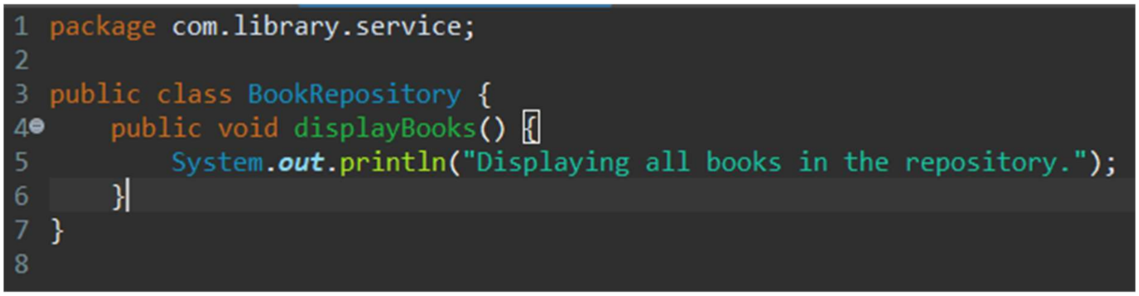
Solution:

Added dependencies in pom.xml



```
https://maven.apache.org/xsd/maven-4.0.0.xsd (xsi:schemaLocation)
<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>com.library</groupId>
  <artifactId>LibraryManagement</artifactId>
  <version>0.0.1-SNAPSHOT</version>
  <dependencies>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-context</artifactId>
        <version>5.3.36</version>
    </dependency>
</dependencies>
</project>
```

Created BookRepository.java

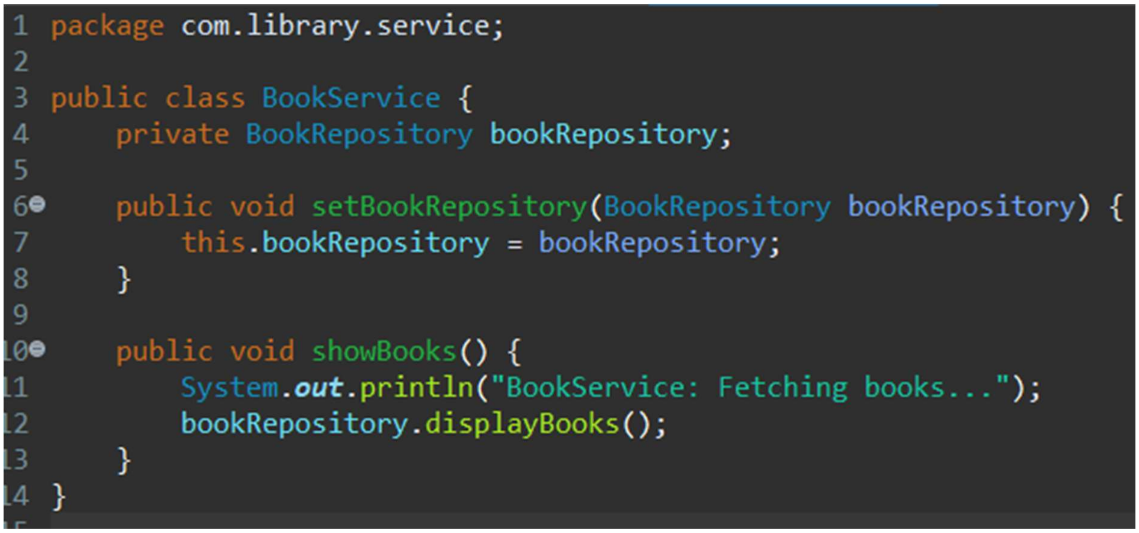


```java
package com.library.service;

public class BookRepository {
    public void displayBooks() {
        System.out.println("Displaying all books in the repository.");
    }
}

```

Created BookService.java



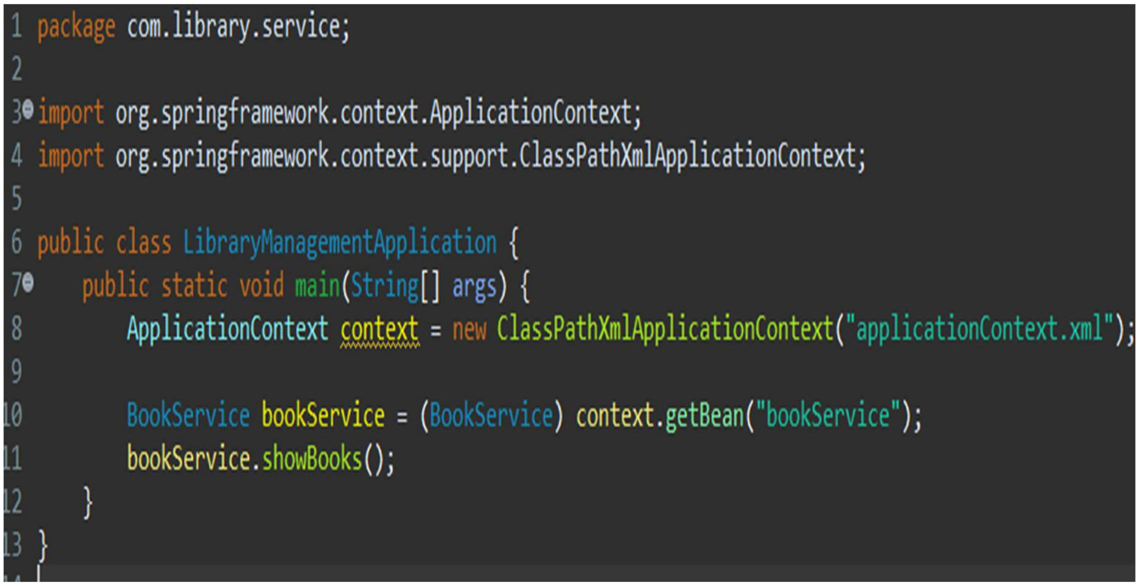
```java
package com.library.service;

public class BookService {
    private BookRepository bookRepository;

    public void setBookRepository(BookRepository bookRepository) {
        this.bookRepository = bookRepository;
    }

    public void showBooks() {
        System.out.println("BookService: Fetching books...");
        bookRepository.displayBooks();
    }
}
```

Created LibraryManagementApplication.java



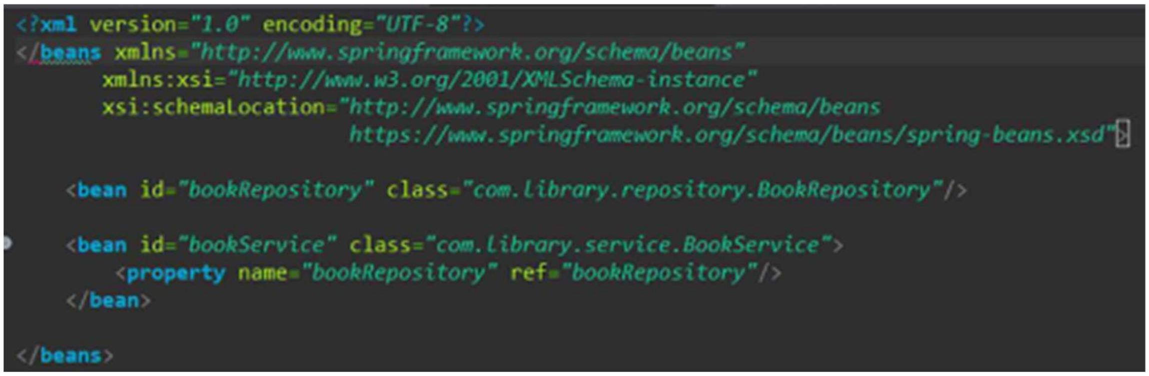
```java
package com.library.service;

import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;

public class LibraryManagementApplication {
    public static void main(String[] args) {
        ApplicationContext context = new ClassPathXmlApplicationContext("applicationContext.xml");

        BookService bookService = (BookService) context.getBean("bookService");
        bookService.showBooks();
    }
}
```

Created applicationContext.xml



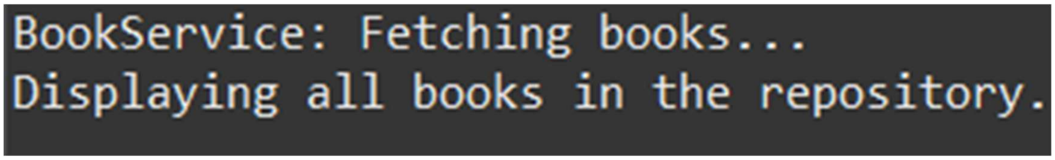
```xml
<?xml version="1.0" encoding="UTF-8"?>
</beans xmlns="http://www.springframework.org/schema/beans"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:schemaLocation="http://www.springframework.org/schema/beans
                           https://www.springframework.org/schema/beans/spring-beans.xsd">

    <bean id="bookRepository" class="com.library.repository.BookRepository"/>

    <bean id="bookService" class="com.library.service.BookService">
        <property name="bookRepository" ref="bookRepository"/>
    </bean>

</beans>
```

Output:



```
BookService: Fetching books...
Displaying all books in the repository.
```